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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/925,739	08/10/2001	Yoshiaki Tatsumi	P101160-00017	6659

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EXAMINER

KITOV, ZEEV

ART UNIT

PAPER NUMBER

2836

DATE MAILED: 03/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/925,739

Applicant(s)

TATSUMI ET AL.

Examiner

Zeev Kitov

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 8 is/are allowed.
- 6) ☒ Claim(s) 1 - 6, 9 - 11 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. Claim 6 is objected to because of the following informalities: the claim recites two polyamide-based adhesive layers without giving them different names. It sounds confusing and creates misunderstanding. For sake of clarity, an applicant should give them different names. Appropriate correction is required.

Claim 7 is objected to due to the following informalities: in line 8 of the claim the words "film" and "which" should be separated.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

3. Claims 5, 9 and 10 are rejected under 35 U.S.C. 102(a) as being anticipated by Tomaru et al. (US 6,071,630). Regarding Claim 5, Tomaru et al. disclose all the elements of the claim, including a step in which a thermoplastic polyamide-based adhesive film with thickness of 10 μm (col. 8, lines 55 – 57), a polyamide films used as a first and second insulation layers (both insulation layers are made of thermally conductive silicon rubber, see an Abstract), and the second thermoplastic polyamide-based adhesive film with thickness of 10 μm (col. 8, lines 55 – 57) are sequentially superimposed on metal substrate and followed by a low-temperature compression bonding at a temperature of 120⁰C (col. 8, lines 58 – 61) sequentially laminating the first insulation layer, the electrode layer and the second insulation layer on the metal surface (col. 8, lines 42 – 67). Though Tomaru et al. state at some place that one of the insulative layers is formed from ceramic material, they disclose an alternative way of forming both insulative layers from thermally conductive silicone rubber (see Abstract).

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Regarding Claim 6, Tomaru et al. disclose a manufacturing method including a step of forming the electrode layer on one side surface of a second insulation layer by plating means (col. 8, lines 42 – 53), a step in which a thermoplastic polyamide-based adhesive film with a thickness of 10 μm , a polyamide film constituting the first insulation layer, a thermoplastic polyamide-based adhesive film with a thickness of 10 μm , an electrode layer, a thermoplastic polyamide-based adhesive film with a thickness of 10 μm and a polyamide film constituting the second insulation layer are sequentially superimposed on a metal substrate, and a step in which a low-temperature compressing bonding pressing is performed at a heating temperature of 120⁰ C under pressure so as to form a laminated structure (col. 8, lines 42 – 67, col. 9, lines 33 – 49).

Regarding Claim 9, Tomaru et al. discloses the metal substrate made of aluminum (col. 8, line 54).

Regarding Claim 10, Tomaru et al. discloses the polyamide film having thickness of 10 μm .

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arasawa et al. (US 5,547,539) in a view of Ooshio et al. (US 4,645,218). Arasawa

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et al. discloses most of the elements of the claim including a laminated structure electrostatic chuck being formed by a first and a second insulation layers (element 20 in Fig. 8A), and electrode layer (element 19 in Fig. 8A) and a second insulation layer (second element 20 in Fig. 8A) on a metal substrate (susceptor, element 14, in Fig. 8A), wherein the insulation layers are made of polyamide films (col. 4, lines 26 – 33). However they do not disclose at least one adhesion layer located between the metal substrate and the first insulation layer.

Ooshio et al. discloses at least one adhesion layer (element 6 in Fig. 3, col. 2, lines 43 – 68) located between the metal substrate and the first insulation layer made by using a thermoplastic polyamide-based adhesive film having a thickness of 40 μm . Both patents have the same problem solving area, namely providing efficient and reliable electrostatic chuck structure. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the polyamide film adhesive layer according to Ooshio et al. in the electrostatic chuck of Arasawa et al., because as Ooshio et al. states (col. 1, lines 36 – 45), to prevent wearing of the metallic support body and damage due to a high temperature, the support body surface is to be entirely covered by a flexible insulation material, such as polyamide films. It is common in the art attaching the insulation to the support by the adhesive film, as reference discloses. As to selection of the adhesive film with particular thickness, according to Ooshio et al. (col. 2, lines 63 – 68, col. 3, lines 1 - 2), it is essential that the chuck body is formed as thin as possible in order to increase heat transmission efficiency.

Regarding Claim 3, Arasawa et al. discloses the metal substrate made of an aluminum alloy (col. 4, lines 3 – 8).

Regarding Claim 4, Arasawa et al. discloses the insulation layer as the polyamide film having thickness of 10 – 100 μm .

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arasawa et al. in a view of Ooshio et al. and further in a view of Matsunaga et al. (US 5,645,921). As was stated above, Arasawa et al. and Ooshio et al. disclose all the elements of Claim 1. However, regarding Claim 2, they do not disclose a second adhesion layer. Matsunaga et al. disclose an electrostatic chuck having two insulation layers (elements 4a and 4b in Fig. 4), an electrode layer (element 3a in Fig. 4), and three adhesive layers (elements 2a, 2b and 2c in Fig. 4, col. 1, lines 44 – 67, col. 2, lines 1 – 6); the polyamide-based adhesive films have a thickness of 10 – 50 μm (col. 2, lines 4 – 6). All the reference patents have the same problem solving area, namely providing efficient electrostatic chuck equipment. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used multiple adhesive layers as cited by Matsunaga et al., because as Matsunaga et al. state (col. 2, lines 31 – 32), the adhesive layers are used for laminating chick composite materials.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tomaru et al. in a view of Kotato et al. (US 6,099,678). As was stated above Tomaru et al. disclose all the elements of Claim 5. However regarding Claim 11, they do not disclose

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some details of the compression condition. Kotato et al. disclose laminating method of film shaped bonding material, wherein the low temperature compression bonding is performed under the compression conditions of 0.03 to 2 Mpa (col. 11, lines 1 – 11, Claims 6 and 25). Both patents have the same problem solving area, namely providing efficient means of polymeric bonding. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the value of pressure according to Kotato et al. in the bonding process of Tomaru, because as Kotato et al. state (col. 2, lines 32 – 35), the film-shaped organic bonding material requires application of pressure so that the material is reliably provided with wettability. It is obvious therefore that the degree of pressure is essential part of a protocol.

Allowable Subject Matter

7. Claim 7 and 8 are allowed. A reason for that is that the claims recite some details of manufacturing process, which are not disclosed in a collected prior art of the record.

8. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Conclusion

The prior art made of record not relied upon is considered pertinent to applicant's disclosure: US 6,166,897, US 6,256,187, US 5,851,641, US 5,622,5935, US 5,691,876.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeev Kitov whose telephone number is (703) 305-0759. The examiner can normally be reached on 8:00 – 4:30. If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (703) 308-3119. The fax phone numbers for organization where this application or proceedings is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Z.K.
01/20/03



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